

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 01-310543

(43)Date of publication of application : 14.12.1989

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(51)Int.Cl. H01L 21/308

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(21)Application number : 63-142302 (71)Applicant : NEC CORP

(22)Date of filing : 08.06.1988 (72)Inventor : FURUKAWA AKIO

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## (54) ETCHANT

### (57)Abstract:

PURPOSE: To enable the etching depth to be controlled not to exceed 100&angst; or less as well as etchant to be used for a device process by a method wherein hydrochloric acid, hydrogen peroxide solution and water are mixed with one another within the specific range in respective volumic ratios.

CONSTITUTION: As for an etchant of  $\text{Al}_x\text{Ga}_{1-x}\text{Sb}$  ( $0 \leq x \leq 1$ ), hydrochloric acid, hydrogen peroxide solution and water are mixed with one another at the ratio of w:y:z while the values of w, y, z are specified in volumic ratio within the range of  $10 \leq w \leq 4$ ,  $0.0 \leq y \leq 5$ ,  $30 \leq z \leq 1000$ . Then, any solutions in different rates can be produced by changing the mixing ratio of HCl, H<sub>2</sub>O<sub>2</sub>, H<sub>2</sub>O for example the etching rate can be decelerated by increasing the ratio of H<sub>2</sub>O not to produce a thick surface oxide film etc. Through these procedures, the etching depth in 100&angst; or less can be controlled enabling the oxide film to be thinned as well as a device comprising a material of this system to be manufactured.

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## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's